



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,920	10/31/2001	Norbert Ammann	9303-3	8947
20792	7590	04/07/2004	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627			LEE, GRANVILL D	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/001,920

Applicant(s)

AMMANN ET AL.

Examiner

Granvill D Lee, Jr

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10,13-21 and 23-29 is/are rejected.
- 7) ☒ Claim(s) 9,11-12&22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/12/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Applicant's Argument

After review of applicant's amendments and comments, the examiner finds such arguments unpersuasive. Applicant's comments as to Casey et al. are well taken, however in further review of the prior art, the examiner has found that DE4141775 and EPO 2000232263 further reads upon applicant's claimed invention. As these are new grounds for rejection not necessitated by applicant's amended claimed invention, and is not to be considered final rejections of the claims.

Claim Objections

Claims 3-4 recite the limitation of "the electrical conductive structure" although more specific (to include thin-film or multi-layered) in the base claim, still lacks sufficient basis if the limitation is to remain altered. And therefore is insufficient antecedent basis for this limitation in these claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2825

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-8, 10,14-20, and 23-26, are rejected under 35 U.S.C. 102(b) as being anticipated by DE41-41775.

In view of claims 1 and 14, DE41-41775 discloses a device comprising an electrical circuit (Fig 2 #4 & #6) carried by a plastic carrier (Fig. 2 #2) the electrical circuit (#6) comprising an electrically conductive thin-film (#4) or multi-layer ceramic (MLC) structure (Fig. 3) being provided on a surface of the plastic carrier element (#2), wherein one component of the electrical circuit that are electrically coupled to the thin film (#4) or multi-layer ceramic structure are arranged on a side of the electrically conductive thin film or multi-layer ceramic structure (Fig. 3) facing the carrier element and wherein the carrier element (#2) is adjacent to a conductive thin-film or multi-layer ceramic structure (Fig. 3). DE41-41775 shows an adhesive (#72) with more than one component or a plastic substrate, which is temporary.

In view of claim 3, DE41-41775 shows a device, where the electrically conductive structure with components facing the carrier (#4) and embedded in it.

In view of claim 4-6, DE41-41775 discloses a device wherein the electrically conductive structure comprises a single-layer or multi-layer thick-film structure (Abstr.).

In light of claim 7, DE41-41775 points out a device where the electrically conductive structure is arranged and constructed so that it forms active electronic components.

In view of claim 8, DE41-41775 discloses a device where the electrically conductive structure (#4) is arranged and constructed so that it forms conductors connecting specific points on the surface of the carrier element with one another.

In regard to claim 10, DE41-41775 includes a device where the components of the electrical circuit arranged on the side of the electrically conductive structure facing the carrier element comprise various components, whereas electrical (active and/or passive) components are suggested (Abstr.).

In view of claim 15-17, DE41-41775 discloses applying the electrically conductive structure to the side of the temporary plastic substrate comprises applying a single-layer or multi-layer thin-film structure to the temporary structure (#2).

In view of claim 18, DE41-41775 points out that applying the electrically conductive structure to the side of the temporary substrate is effected such that the layer structure of the electrically conductive structure can be opposite to the layer structure of the electrically conductive structure present in the finished arrangement on the carrier element (Fig. 1-4).

In view of claims 19 and 23, DE41-41775 shows mounting further components of the electrical circuit on the electrically conductor structure (#6) is possible by adhesion or soldering (#72).

In view of claim 20, DE41-41775 discloses applying the composition forming the carrier element is effected by casting or injection-epoxy plastics material (#72) at least partly around the further components of the electrical circuit (#6).

In view of claim 24, DE41-41775 discloses the active or passive components of at least one semiconductor chip are used in the device formation (Abstr).

In view of claim 25, DE41-41775 discloses the connecting electrical devices which could comprise at least one electrical connector in forming the device (Abstr.).

In view of claim 26, the use of a temporary substrate is independent of its thickness, and further since elements are adhered to the side facing the carrier element.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE41-41775 in view of EPO 2000232263.

In view of these claims, DE41-41775 discloses a device comprising an electrical circuit (Fig 2 #4 & #6) carried by a plastic carrier (Fig. 2 #2) the electrical circuit (#6) comprising an electrically conductive thin-film (#4) or multi-layer ceramic (MLC) structure (Fig. 3) being provided on a surface of the plastic carrier element (#2). However, DE 41-41775 fails to include a surface mounting teaching where this structure could be used. EPO 2000232263 offers a teaching where components of the surface mounted variety (resistor/capacitor) encased in a resin and provide a complete circuit board. (Abstr.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the temporary carrier techniques of DE41-41775 in favor of a surface circuit board structure of EPO 2000232263, can be thinned for various practical purposes. EPO saw that once the resin structure was complete, that surface placement in a circuit board or acting as a circuit board increased the versatility of the device (Abstr.).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over DE41-41775 in view of EPO 2000232263 in further view of Yamazaki et al. (US Pat. 6,118,502).

In view of this claim, DE41-41775 discloses a device comprising an electrical circuit (Fig 2 #4 & #6) carried by a plastic carrier (Fig. 2 #2) the electrical circuit (#6) comprising an electrically conductive thin-film (#4) or multi-layer ceramic (MLC) structure (Fig. 3) being provided on a surface of the plastic carrier element (#2). However, DE 41-41775 and EPO 2000232263 fails to include a temporary substrate with certain parameters. Yamazaki et al. discloses a temporary substrate, which is 0.3 millimeters thick.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the temporary carrier techniques of DE41-41775 and EPO 2000232263 in favor the dimensioned approach of Yamazaki et al. Yamazaki et al. saw that as a matter of engineering choice, that a thickness parameter may be required for space sensitive applications (Col. 7 lines 32-35).

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over DE41-41775 in view of Malloy et al. (US Pat. 5,455,202).

In view of this claim, DE41-41775 discloses a device comprising an electrical circuit (Fig 2 #6) carried by a metallized carrier (Fig. 2 #2) the electrical circuit (#6) comprising an electrically conductive thin-film (#4) or multi-layer ceramic (MLC) structure (Fig. 3) being provided on a surface of the metallized carrier element (#2). But this inventor fails to remove the temporary substrate through an etching process. However, Malloy et al. discloses a

Art Unit: 2825

process where the temporary substrate contains an etchable layer which releases the temporary substrate (abstr.).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the temporary carrier techniques of DE41-41775 in favor of the etchable layer method of Malloy et al. because the use of such a temporary structure only serves as a grasping or support aid in the process, and may do more harm than good further into the device processing steps (Col. 4 lines 8-25).

Allowable Subject Matter

Claims 9,11-12, 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications for the examiner should be directed to Granvill Lee whose telephone number is (703) 306-5865. The examiner can be normally reached on Monday thru Thursday from 7:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are not successful, the examiner's supervisor, Matthew Smith can be reached on (703) 308-1323. The fax phone number for this group is (703) 308-7722.

Art Unit: 2825

Any inquiry of a general nature relating to status or otherwise should be directed to the receptionist whose telephone number is 703-308-1782.

Examiner
Granvill Lee
Art Unit 2825

G1
8/3/03

A handwritten signature in black ink, appearing to read "Matthew Smith", written in a cursive style.

MATTHEW SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800